I PUC MIDTERM MODEL QUESTION PAPER

CHEMISTRY-34

Time:- 3.15 Hours   Max.Marks: 70

Part-A

I Answer all the questions. Each questions carries ONE marks
                                                                10x1=10

(1) Write the S.I unit of density?

(2) How many Significant figure are there in 3.0667g?

(3) State Avagadro's law?

(4) define limiting reagent?

(5) State modern periodic law?

(6) Which is the most electro negative element in periodic table?

(7) Mention the type of attraction that exist between non polar molecules.?

(8) Give the IUPAC name of element having atomic number 106?

(9) what is a nucleophile?

(10) write the IUPAC name of $CH_3-CH-CH_2-CH_2OH$
                                        |
                                       CH_3

part-B

II Answer any Five questions. Each question carrys two mark
                                                            5x2=10

(11) (a) Express 0.0024 in Scientific notation.
     (b) How many moles are present in 11g of carbon dioxide?

(12) Express 36°C in Fahrenheit Scale?

(13) Calculate the percentage composition of C and H in CO_2.

(14) Derive ideal gas equation using gas laws?

(15) State Charle's law. Give its mathematical form?

(16) What will be the minimum pressure required to compress 500dm³ of air to 200 dm³ at 1 bar, at 30°C?

(17) (a) State Dalton's law of Partial pressure.
     (b) Give relation between the molecular mass and density of a gas.

(18) write any two differences between Homogeneous and Heterogenous mixture?

Part-C

III Answer any Five questions: (Each question carries three marks)
                                                            05x3=15

19. (a) Define Ionization enthalpy. How does it varies along the Period general
    (b) write the electronic configuration of P block elements?

(20) Define electronegativity? How does it vary along the period and down the group in the periodic table

(21)(a) What are isoelectronic species? Arrange the following in the increasing order of their ionic radius N^{-3}, Mg^+, Na^+, O^{-2},
   (b) define transuranium elements

(22)(a) State $(n+1)$ rule? (b) Among 4s and 3d orbital which has more energy?

(23) Mention any three Postulates of Rutherford atomic model

(24)(a) A 25°c and 760mm of Hg pressure a gas occupies 600ml volume. What will be its pressure at a height where temprature is 10°c and volume of the gas is 640mL.
   (b) Give the ideal gas equation for n-mole?

(25)(a) calculate the R value of 'R
   (b) State Gay Lussac's law?

(26)(a) write the demerits of Rutherford atomic model
   (b) State Pauli's exclusive principle?

Part-D

IV Answer any Five of the following. Each question carries 5 marks.

$$5×5=25.$$

27(a) An organic compound contains 4.07% hydrogen, 24.27% of carbon and 71.65% chlorine. Its molecular mass is 98.96. What are its empirical and molecular formula? —3M
   (b) Calculate the molarity of the NaOH in solution prepared by dissolving 4g of NaOH in enough water to form 250mL of Solution. —2M

28(a) Name the four quantum numbers and write their Significance —4M
   (b) State Aufbau Principle. —1M

29.(a) Write any three Postulates of Dalton's atomic model? —3M
   (b) define (i) accuracy & (ii) molality. —2M

30(a) Write any three postulates of Bohr's atomic model? —3M
   (b) Draw a Shape of 2P-orbitals?

31.(a) How many neutrons and Protons are there in $^{56}_{26}Fe$? —2M
   (b) State Heisenberg Uncertainity principle? write its mathematical form —2M
   (c) write the electronic configuration —1M

32(a) Write any three Postulates of Kinetic molecular theory of gases? —3M
   (b) Mention any two Properties of gases. —2M

(33)(a) calculate the standard enthalpy of formation of benzene, if standard enthalpy of CO_2 and H_2O are -393.5 KJ mol^{-1} and -285.9 KJ mol^{-1} respectively and combustion of 1mole of benzene is -3267.0 KJ mol^{-1} - 4M

(b) What is the change in entropy when ice melts to give water? - 1M

34 (a) 2 mole of an ideal gas undergoes a reversible and Isothermal expansion from volume 2.5 L to 10 L at $27°c$ calculate the work done by the gas in this expansion. (Given R = 8.314 JK^{-1}mol^{-1}).

(b) What is an extensive property? Give example.

V Answer any two questions [Each questions carries five marks]

$2 \times 5 = 10$

35 (a) For a compound $CH_3 - CH_2 - CN$
(i) write complete formula
(ii) write the bond line formula
(iii) write the number of Sigma and Pi-bond.
(iv) Identify the type of hybridisation each carbon atom.
(v) Mention whether the compound saturated (or) unsaturated.

36 (a) what is functional isomerism? Give example
(b) define chain isomerism? with examples.
(c) what is electrophile?

37 (a) For the compound CH_3CHO.
(a) Identify number of Sigma & pi-bond
(b) Identify the hybridisation of each carbon atom?
(c) what is the position isomerism? Give example?